## NC Science Unit 4

# Level 1 Unit 4 - Science (Energy)

### 1. The learner will communicate observations of changes in light, sound or movement that result from actions.

1.1 I can identify sources of sound and light [1]

1.2 I can identify changes of brightness [2]

1.3 I can identify changes in loudness [3]

1.4 I can identify a change in speed of an object [4]

1.5 I can identify a change in the direction of movement of an object [5]

# Level 2 Unit 4 - Science (Energy)

### 1. The learner will compare physical phenomena from simple observations.

1.1 I can identify similarities and differences between physical phenomena [7]

1.2 I can compare the way in which devices work in different electrical circuits [8]

1.3 I can compare the brightness of lights [9]

1.4 I can compare the colour of lights [10]

1.5 I can compare the loudness of sounds [11]

1.6 I can compare the pitch of sounds [12]

1.7 I can compare the movement of different objects in terms of speed or direction [13]

# Level 3 Unit 4 - Science (Energy)

### 1. The learner will link cause and effect in terms of the physical processes involved.

1.1 I can explain cause and effect in straightforward circumstances [15]

1.2 I can explain general principles related to cause and effect [16]

1.3 I can describe physical processes in the context of heat [17]

1.4 I can describe physical processes in the context of light [18]

1.5 I can describe physical processes in the context of sound [19]

1.6 I can describe physical processes in the context of motion [20]

# Level 4 Unit 4 - Science (Energy)

### 1. The learner will understand energy, forces and space and explain generally observable physical phenomena.

1.1 I can make generalisations about physical phenomena [22]

1.2 I can use physical ideas to explain simple phenomena related to heat [23]

1.3 I can use physical ideas to explain simple phenomena related to light [24]

1.4 I can use physical ideas to explain simple phenomena related to sound [25]

1.5 I can use physical ideas to explain simple phenomena related to electricity [26]

1.6 I can use physical ideas to explain simple phenomena related to magnetism [27]

1.7 I can use physical ideas to explain simple phenomena related to motion [28]

# Level 5 Unit 4 - Science (Energy)

### 1. The learner will understand how a range of physical changes can take place through practical experience.

1.1 I can vary the current in an electric circuit and explain how to do it [30]

1.2 I can vary the strength of a magnet and explain how to do it [31]

1.3 I can vary the pitch and loudness of sound and explain how to do it [32]

1.4 I can describe how we see things using light [33]

1.5 I can vary the brightness of a light and explain how to do it [34]

1.6 I can vary the direction of a beam of light and explain how to do it [35]

1.7 I can describe the effects of balancing forces [36]

1.8 I can explain day and night in terms of the movement of the Earth [37]

1.9 I can explain the length of the year in terms of movement of the Earth [38]

## Level 6 Unit 4 - Science (Energy)

### 1. The learner will understand a broad range of concepts related to physical processes including some key applications of transfer of energy.

1.1 I can use abstract ideas in descriptions and explanations [40]

1.2 I can explain how forces change the motion of objects [41]

1.3 I can explain transfer of energy in a range of contexts [42]

1.4 I can explain physical phenomena where several factors are involved [43]

1.5 I can give examples of the applications of reflection, refraction and dispersion of light [44]

## Level 7 Unit 4 - Science (Energy)

### 1. The learner will understand the relationships between physical processes including simple quantitative techniques.

1.1 I can explain observed behaviour of physical systems based on electromagnetism [46]

1.2 I can define common physical quantities and name their units of measure [47]

1.3 I can explain a range of physical behaviours in terms of cause and effect [48]

1.4 I can perform simple calculations using formulae that relate physical quantities [49]

1.5 I can describe the relationship between two quantities when variation in one results in variation of the other [50]

# Level 8 Unit 4 - Science (Energy)

### 1. The learner will demonstrate extensive knowledge and understanding related to energy, forces and space including the relationship between evidence and scientific ideas and why scientific ideas change in the light of new evidence.

1.1 I can explain classical energy, forces and space scientifically and comprehesively [52]

1.2 I can relate different aspects of energy, forces and space [53]

1.3 I can represent physical relationships in simple mathematical formulae [54]

1.4 I can interpret data from a range of sources and in a range of contexts including descriptions of physical processes [55]

1.5 I can evaluate data from a range of primary and secondary sources related to forces, energy and space [56]

1.6 I can synthesise information from data related to physical processes [57]

1.7 I can explain the importance of a wide range of applications related to forces, energy and space and the implications of science in these applications [58]

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